Bayer/P4 Soda Springs CERCLA Update

Soda Springs, Idaho

EPA/IDEQ Update
January 29, 2020

Agenda

Conference Call January 29, 2020

0930-0935: Introductions

0935-0940: Schedule Update (Jason Maughan)

0940-1030: RI Status Update/Overview including UBZ-1&2 Update and UBZ-3&4 Update (David Banton)

1030-1045: CERCLA/NPDES Integration (Randy Cooper)

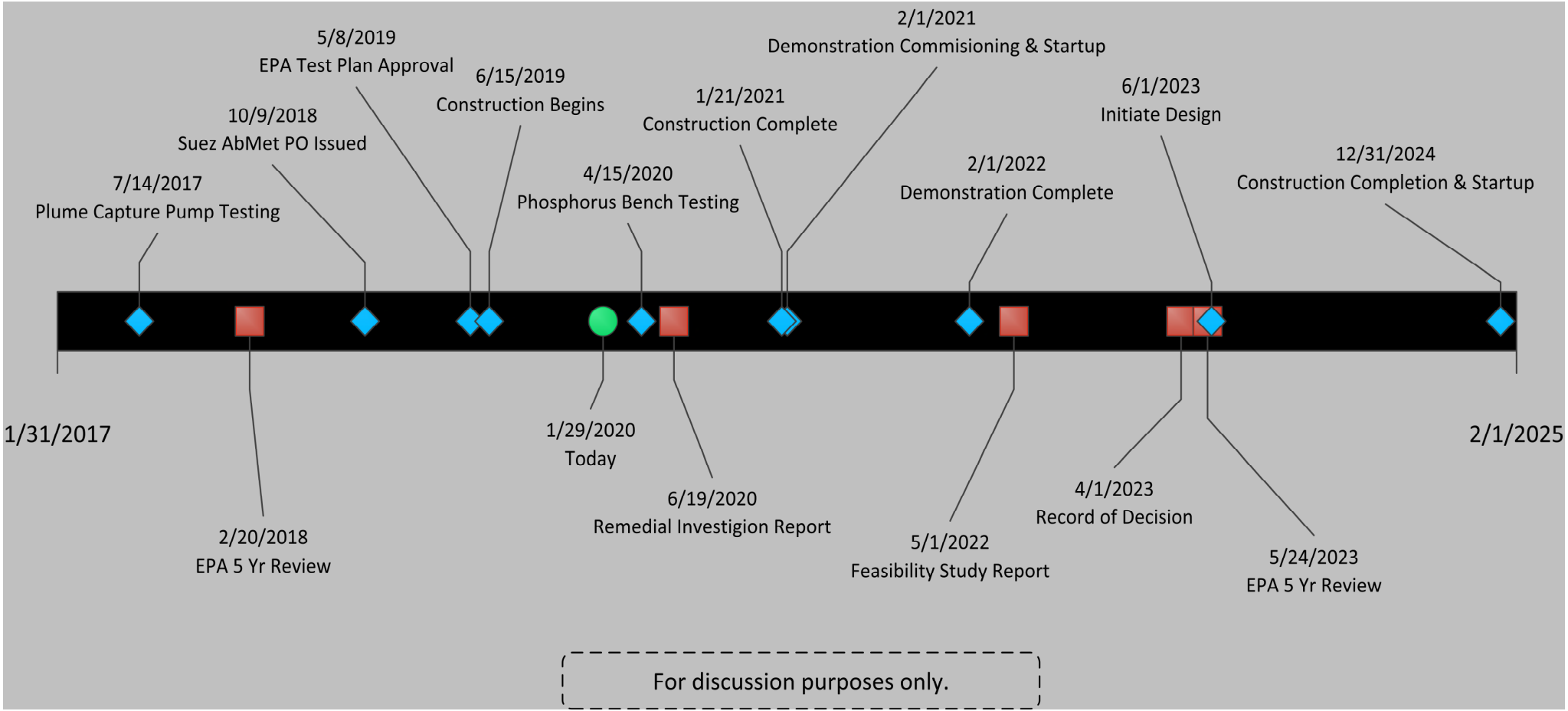
1045-1100: Se Demo Unit Update (Jason Maughan)

1100-1115: Open Discussion & Planning for face-to-face (Group)

Invitees: Kathy Cerise (EPA), Stan Christensen (IDEQ), Randy Cooper (Bayer), Jason Maughan (Bayer), David Banton (Golder & Associates)

Project Schedule

Project Timeline



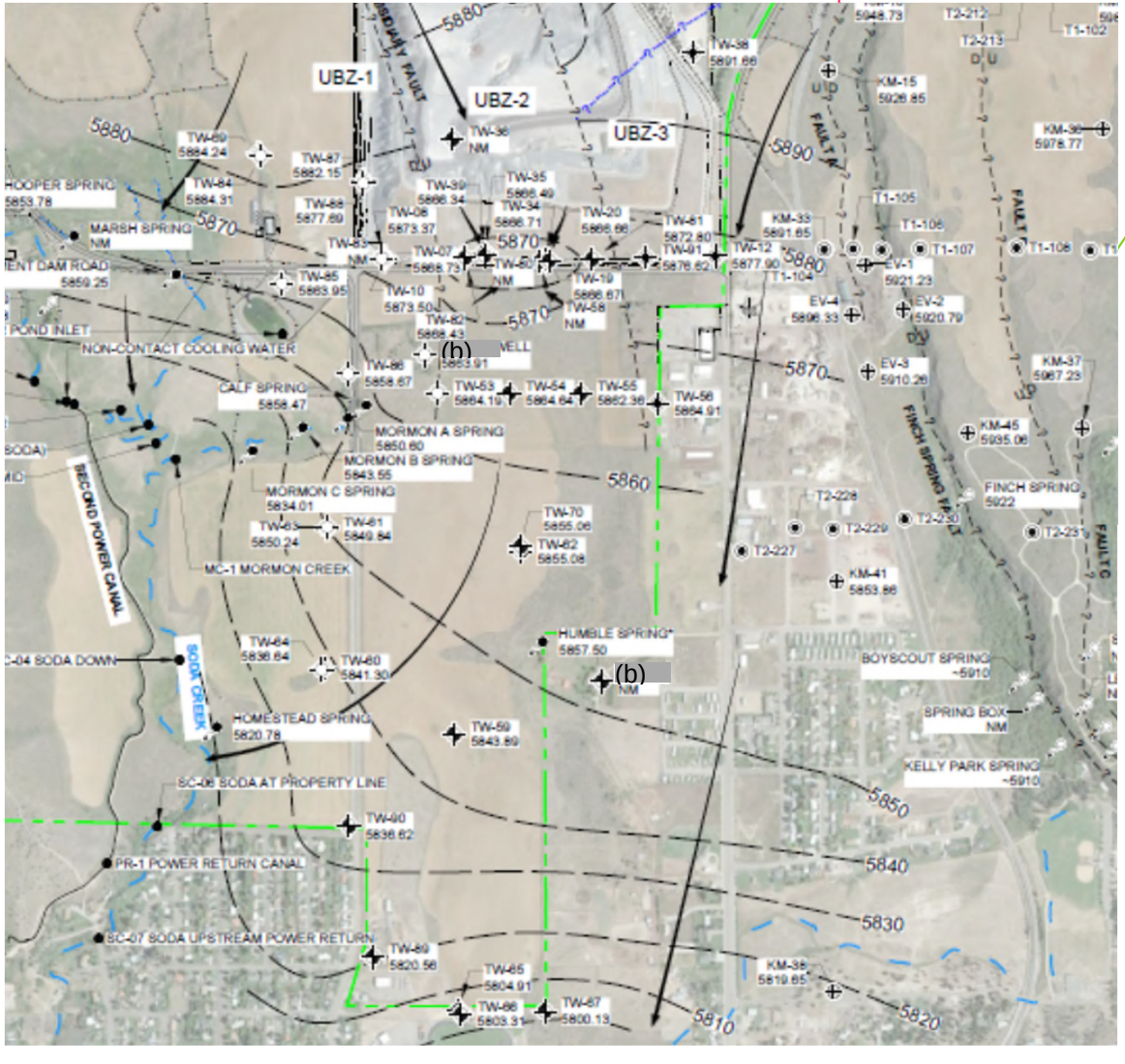
RI Update

UBZ-1 & UBZ-2
UBZ-3 & UBZ-4

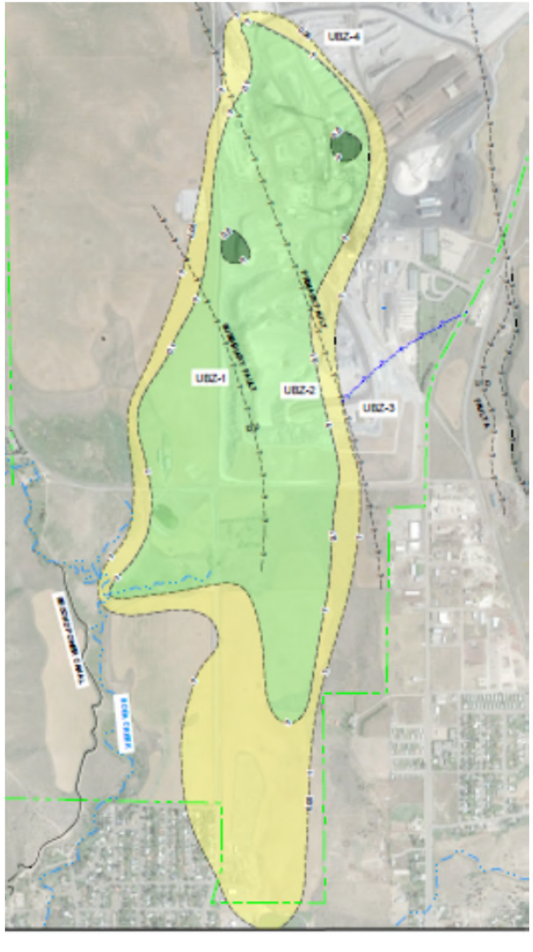
UBZ-1 and UBZ-2

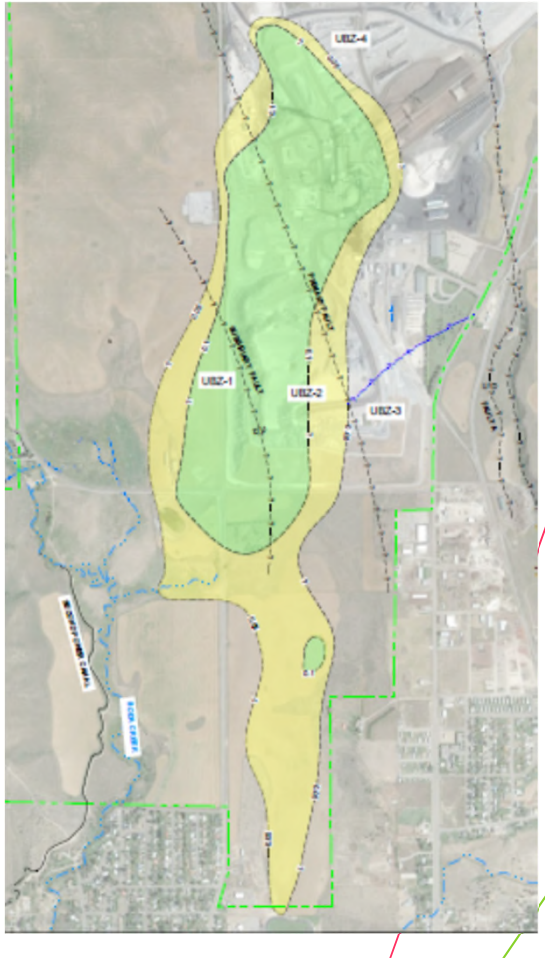
- Annual and Semi-Annual Sampling On-going
  - June 2019
  - November 2018 and 2019
  - Water Quality Changes
- Extended Pumping Test
  - July 2017 to present
  - Near-continuous pumping:
    - TW-58 – BZ-2: 50 to 250 gpm
    - TW-80 – BZ-2: 50 to 250 gpm
    - TW-83 – BZ-1: 15 to 20 gpm
  - Measurable water quality improvement in wells and springs

June 2019 Groundwater Flow South Area

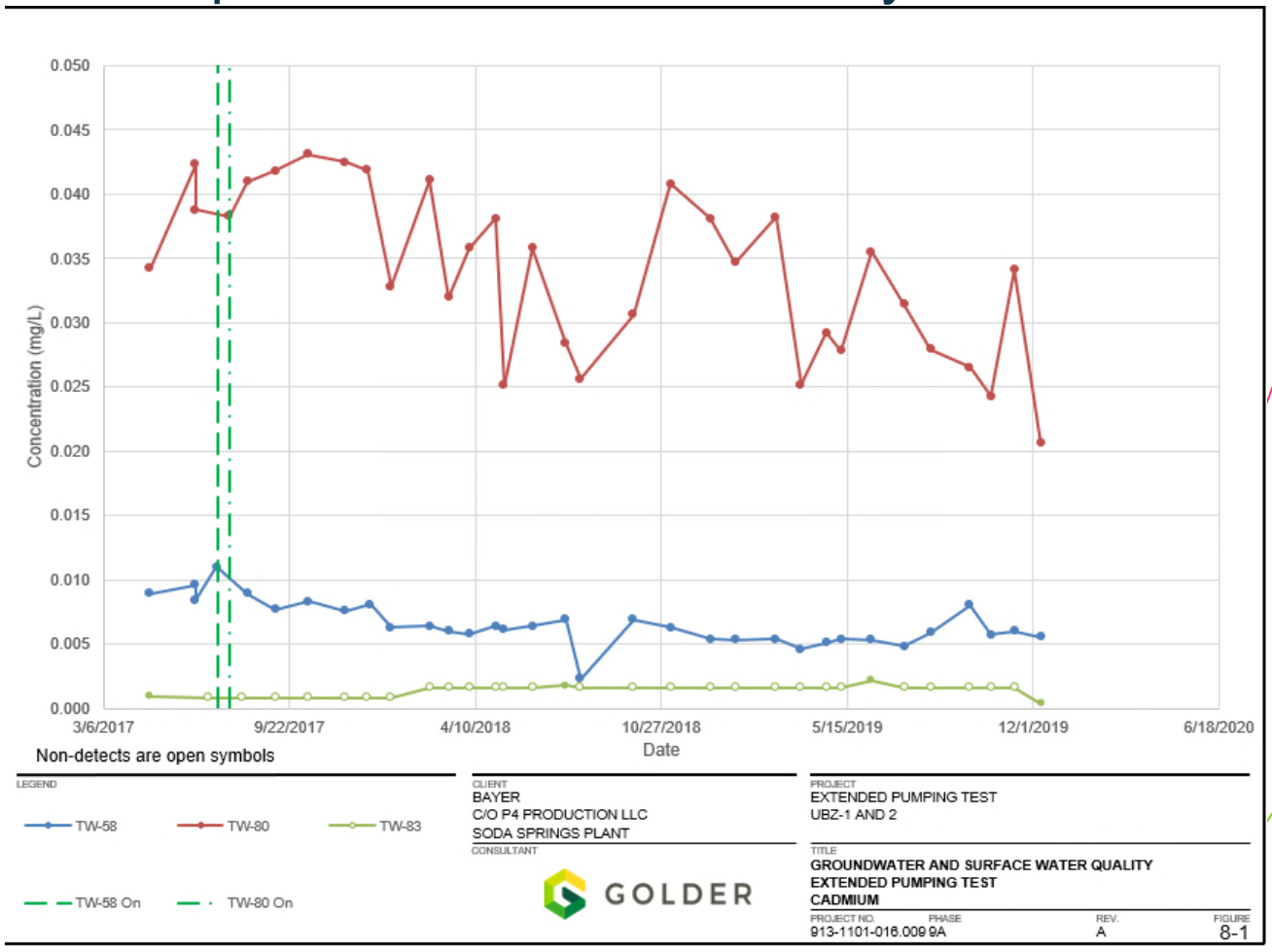


June 2017 and June 2019 UBZ Selenium

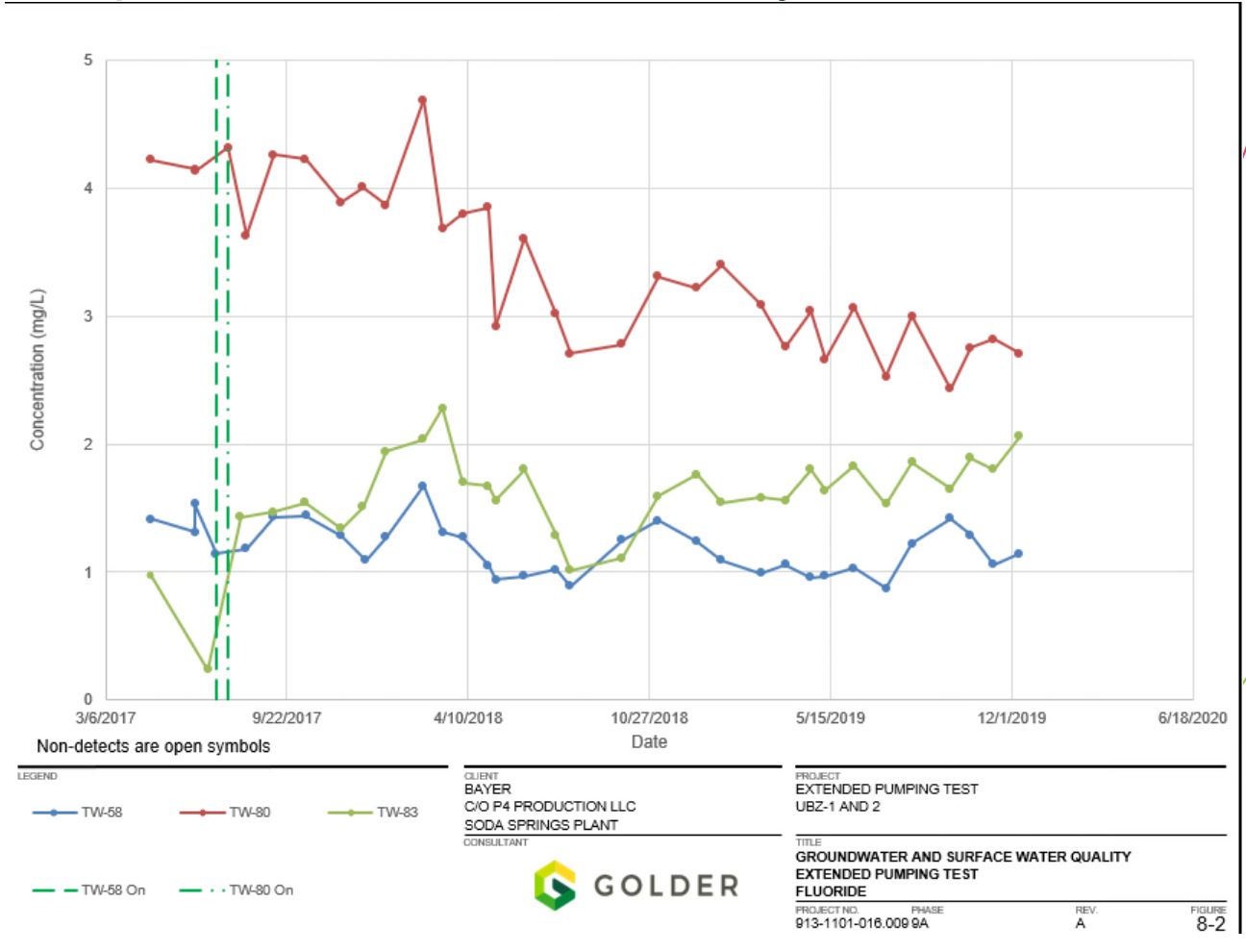




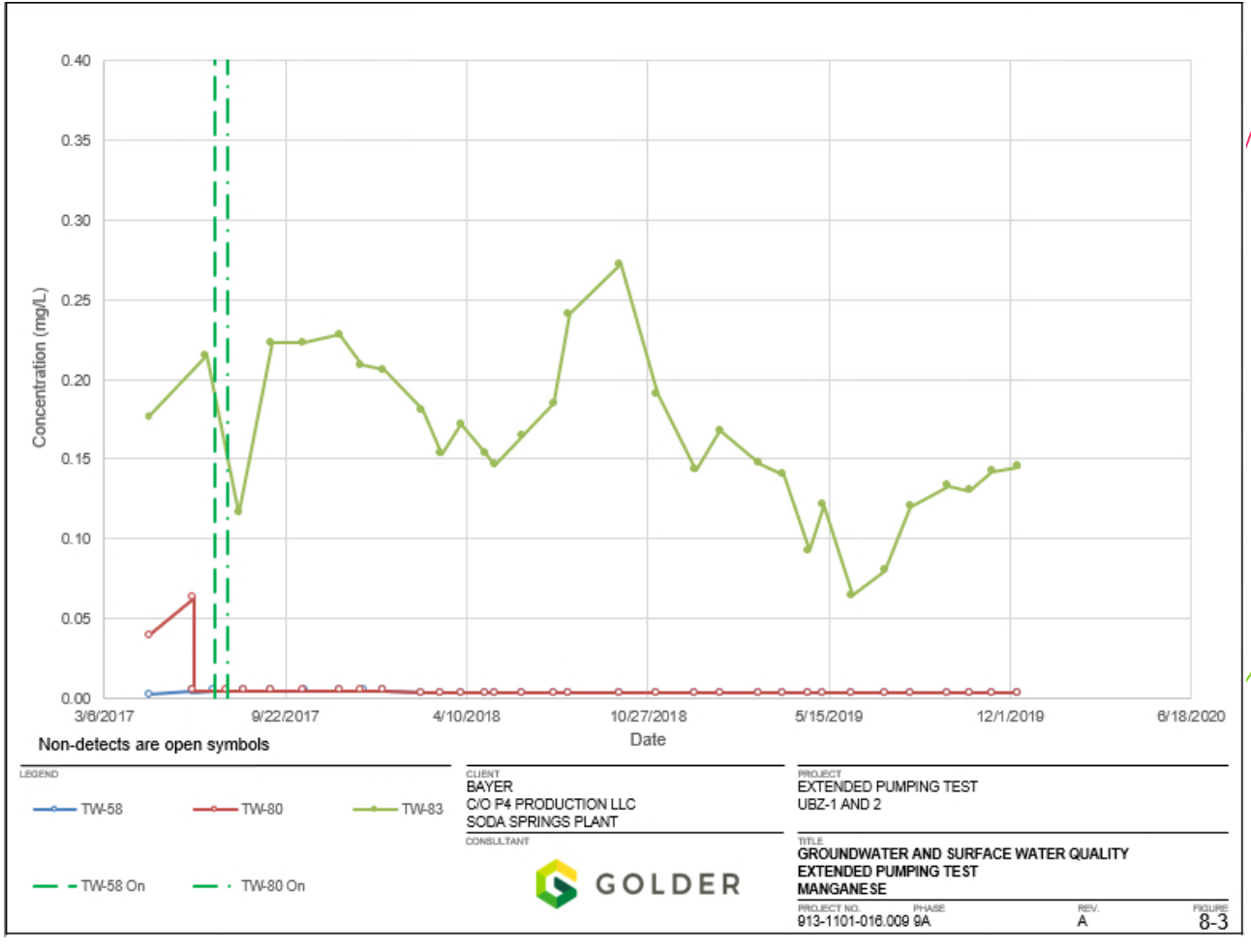
Pumpback Wells Water Quality – Cadmium



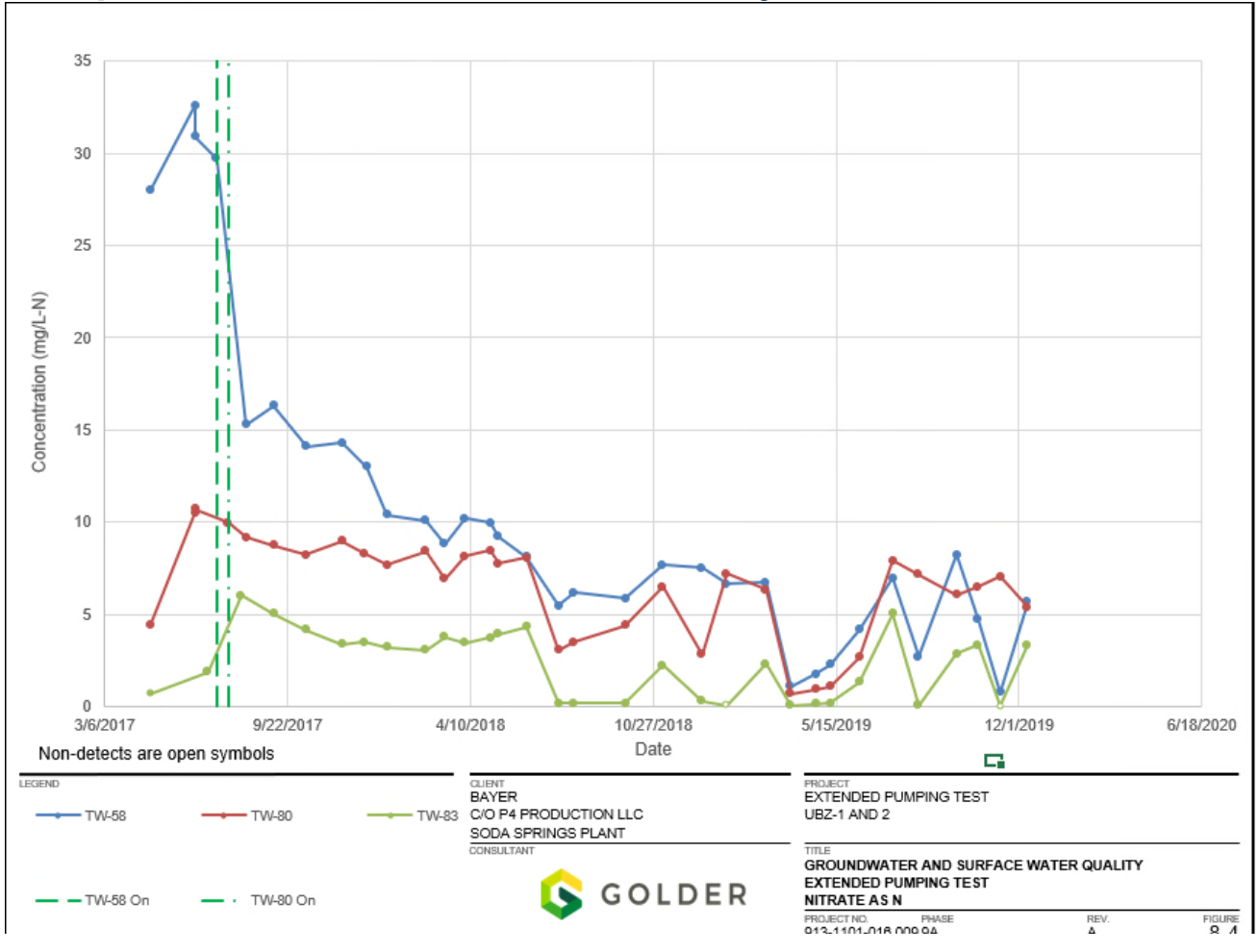
Pumpback Wells Water Quality – Fluoride



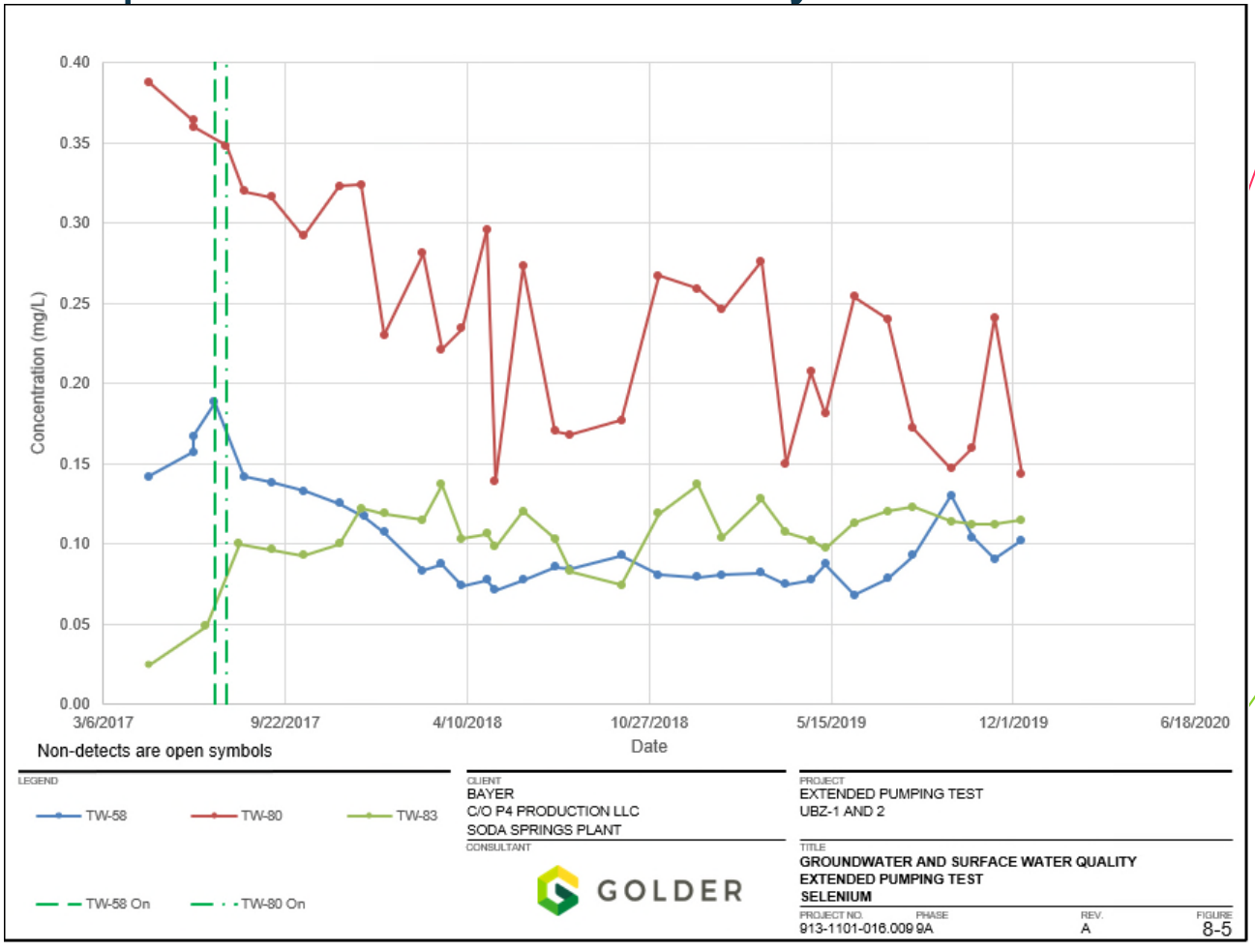
Pumpback Wells Water Quality – Manganese



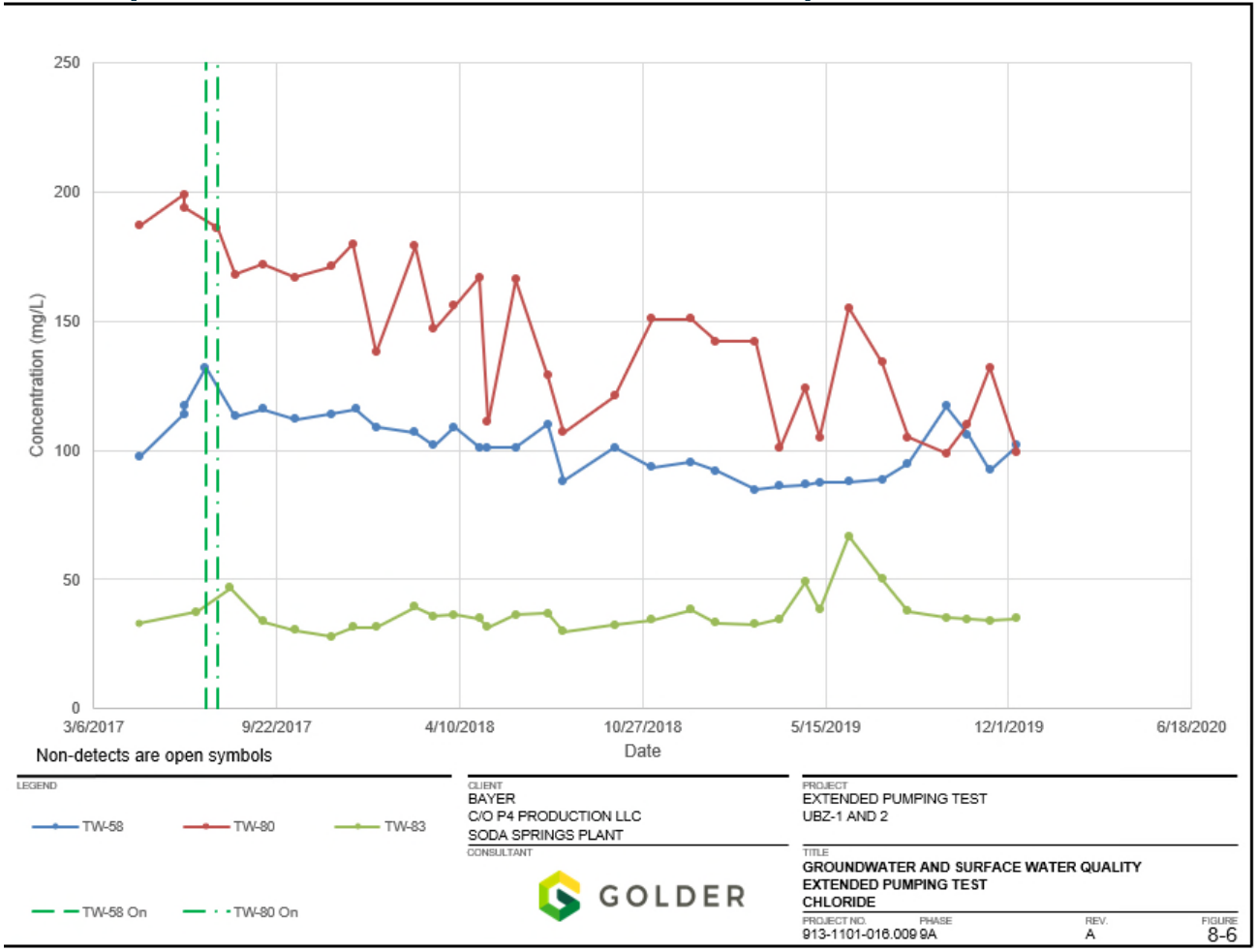
Pumpback Wells Water Quality – Nitrate



Pumpback Wells Water Quality – Selenium

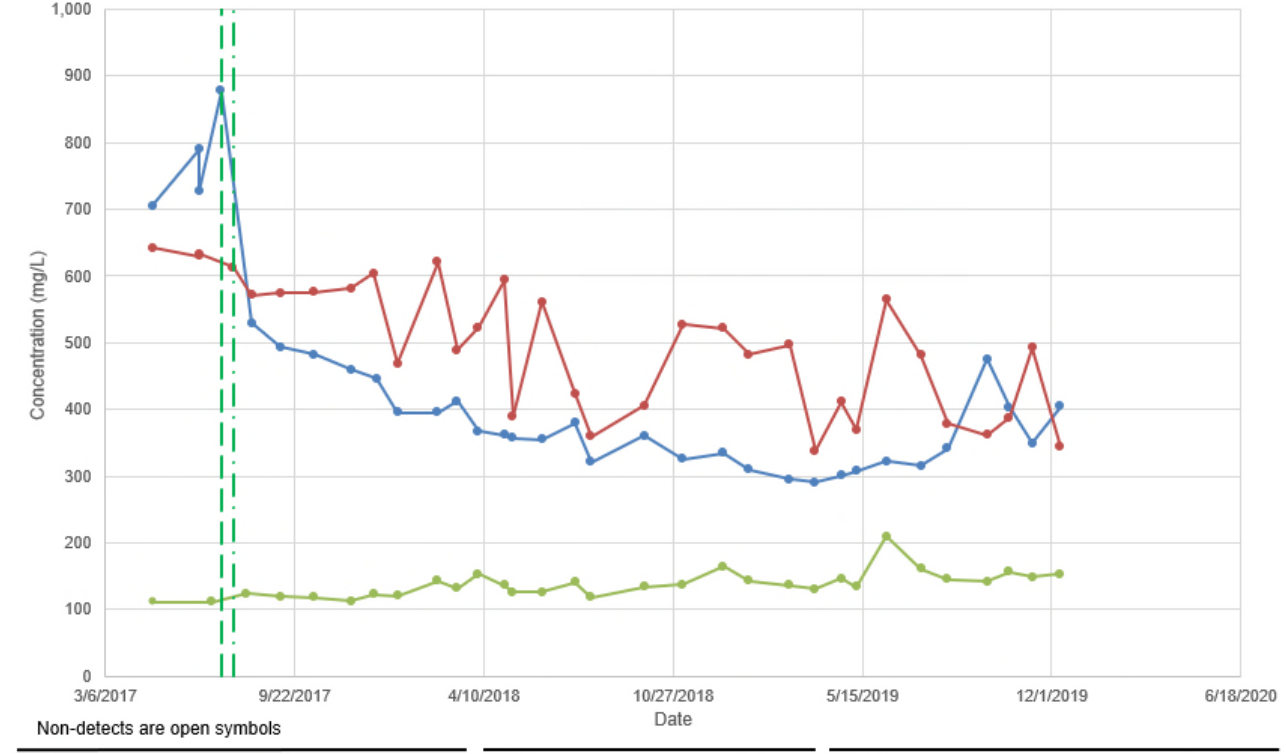


Pumpback Wells Water Quality – Chloride

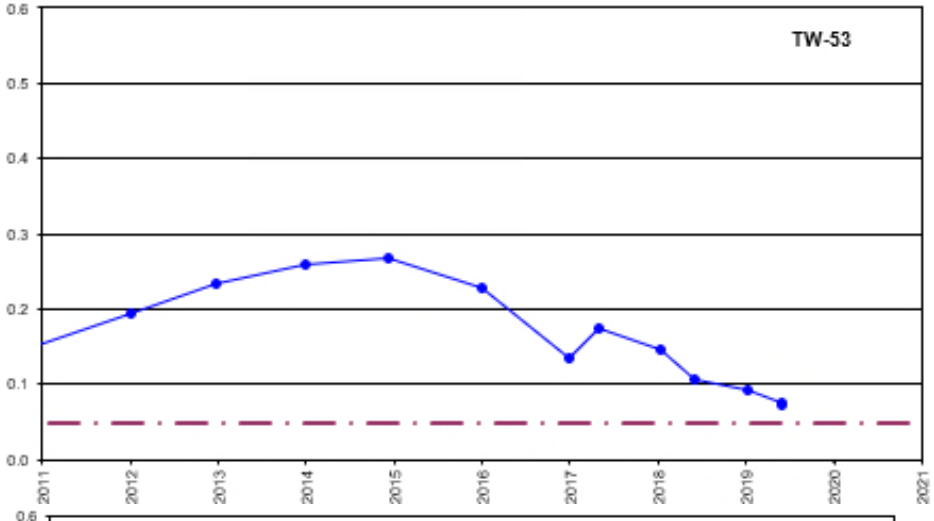


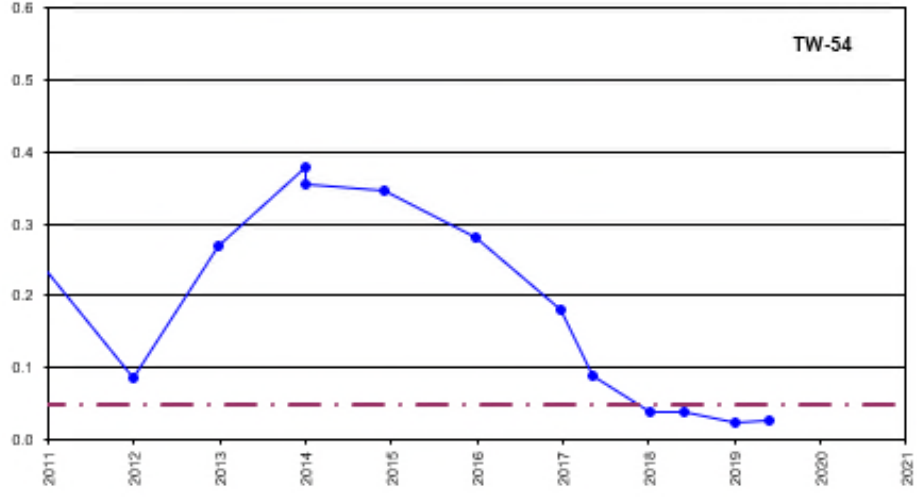
Pumpback Wells Water Quality – Molybdenum

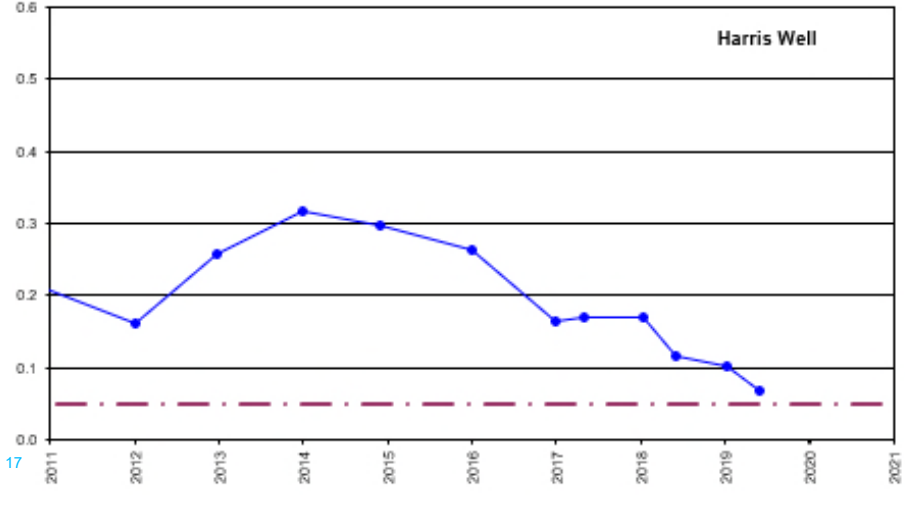
Pumpback Wells Water Quality – Sulfate



Downgradient Test Wells Water Quality – Selenium





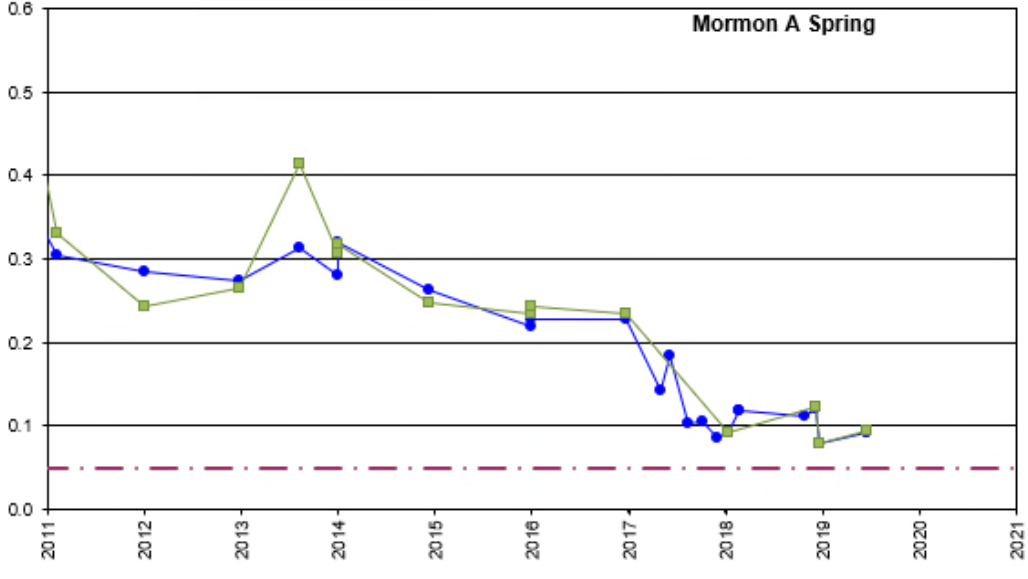


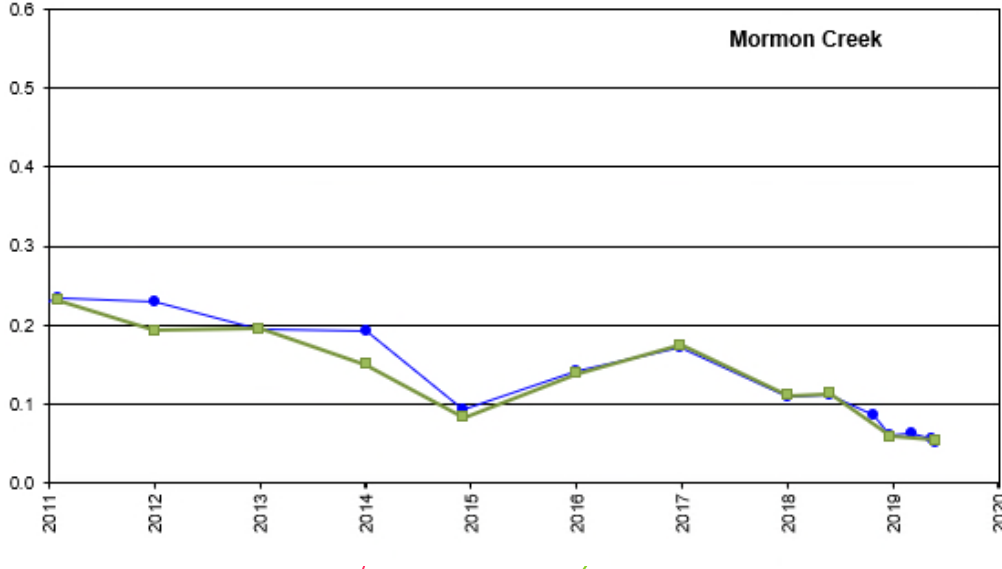
Constituent Concentration (mg/L)

Non-Detects

Selenium Remediation Goal (0.05 mg/L)

Downgradient Springs Water Quality – Selenium





Constituent Concentration (mg/L)

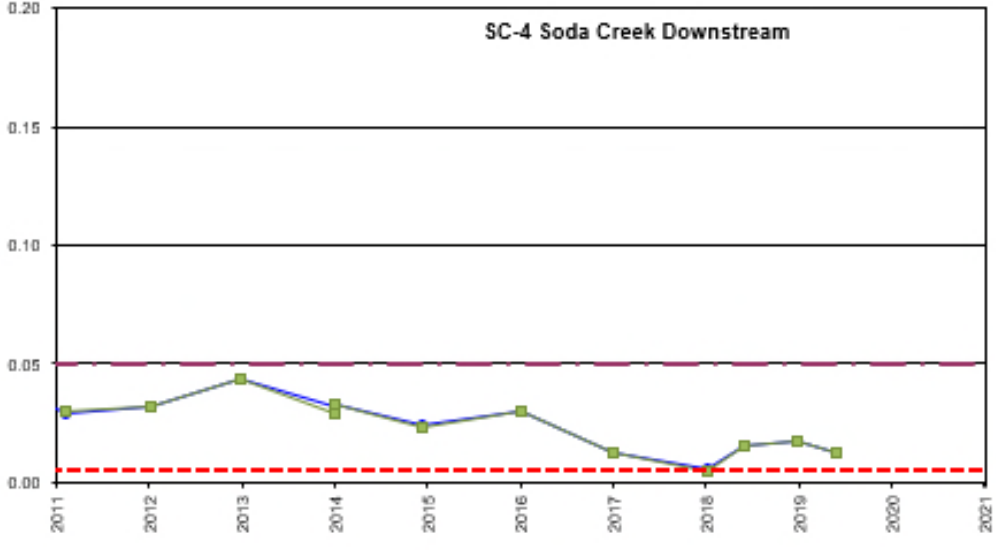
Non-Detects

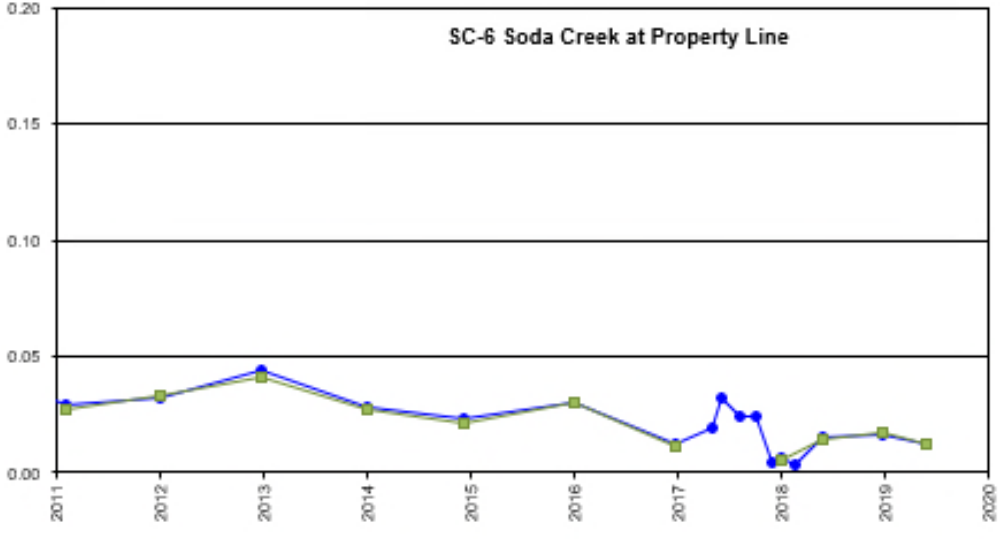
Dissolved Constituent Concentration (mg/L)

Dissolved Non-Detect (mg/L)

Selenium Remediation Goal (0.05 mg/L)

Soda Creek Water Quality – Selenium





Constituent Concentration (mg/L)

Non-Detects

Dissolved Constituent Concentration (mg/L)

Dissolved Non-Detect (mg/L)

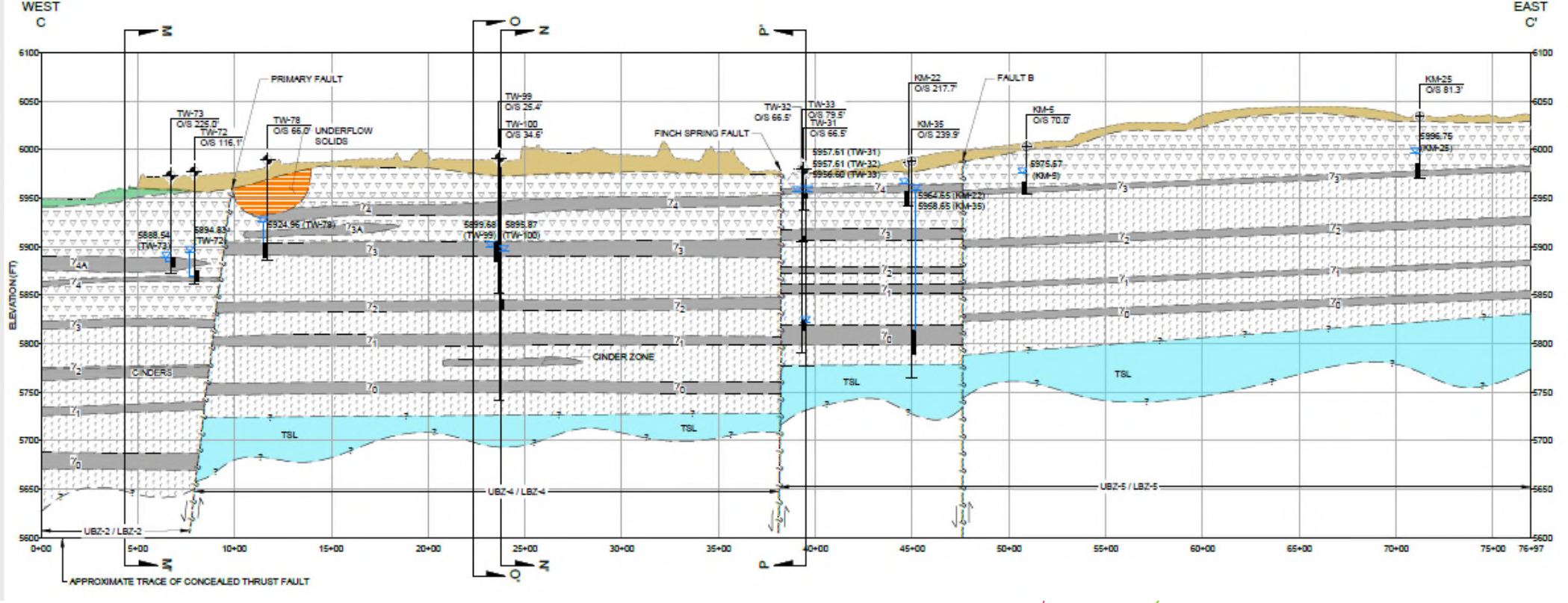
Selenium Remediation Goal (0.05 mg/L)

Chronic Selenium Aquatic Standard (0.005 mg/L)

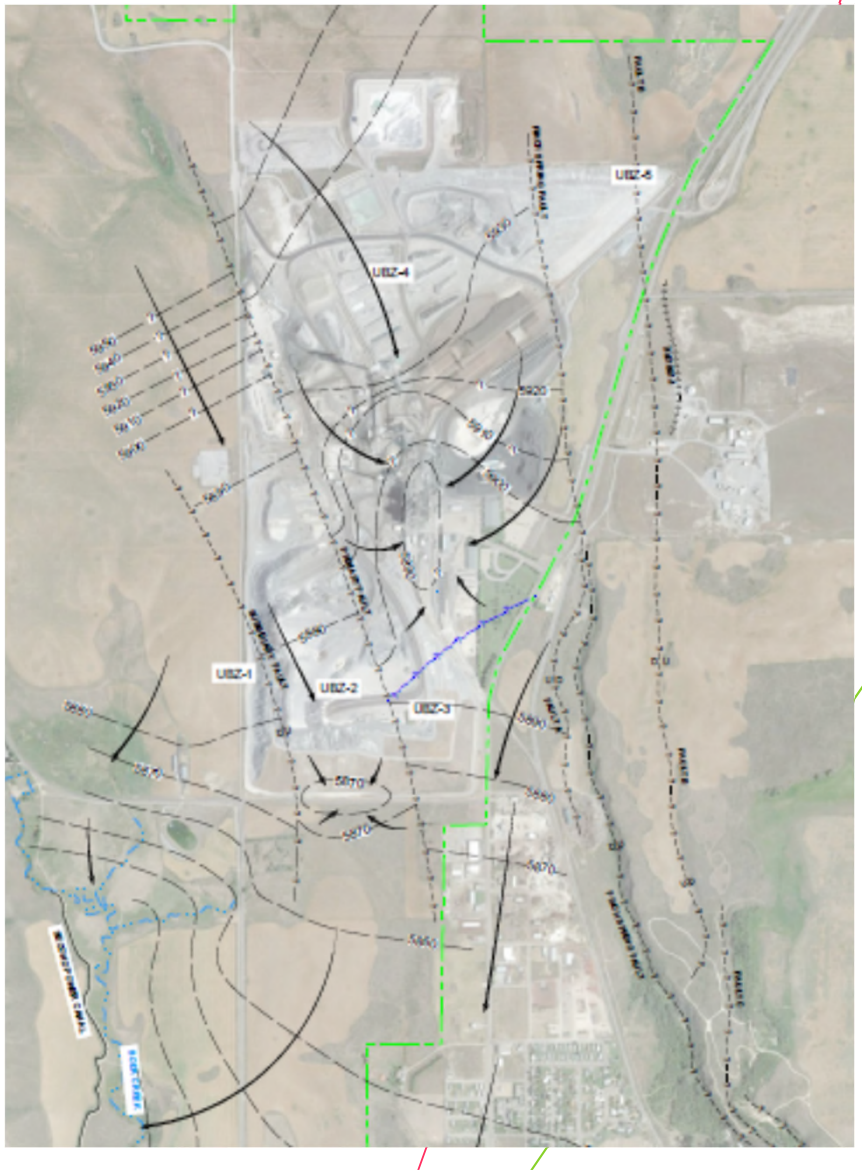
UBZ-3 and UBZ-4

- Annual Water Quality Sampling On-going
  - June 2019
  - Improved definition of plume areas
  - Minor water quality changes
- Monitoring of Effects of Plant Production Wells
  - Monitoring period of ~ 1 yr
  - Estimated aquifer properties from short-term pumping rate changes
  - Identified area influenced by Plant Wells
  - Identified Finch Spring Fault low permeability aquifer boundary
  - Plant wells have little if any influence on UBZ-2
- Pump testing planned for 2020 – TW-101

Reinterpreted Hydrogeology – East Side of Plant

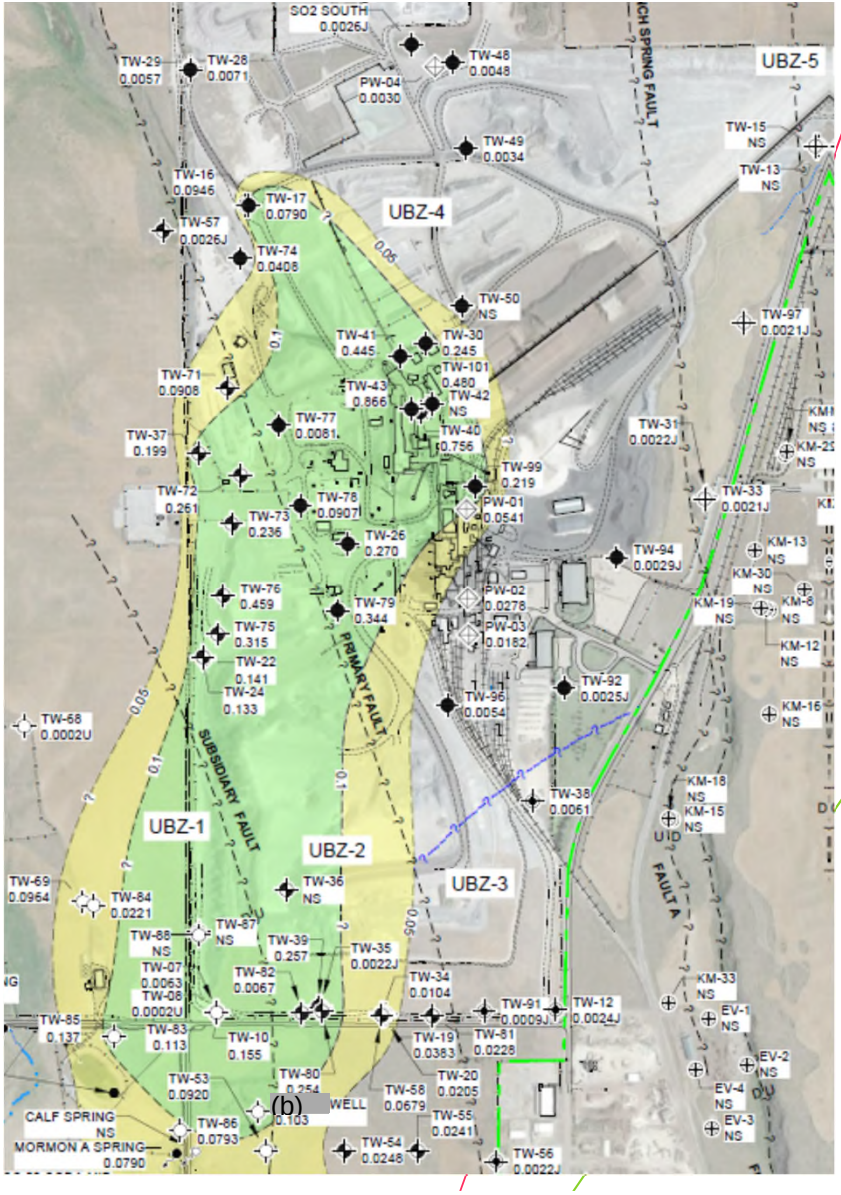


June 2019 Groundwater Flow



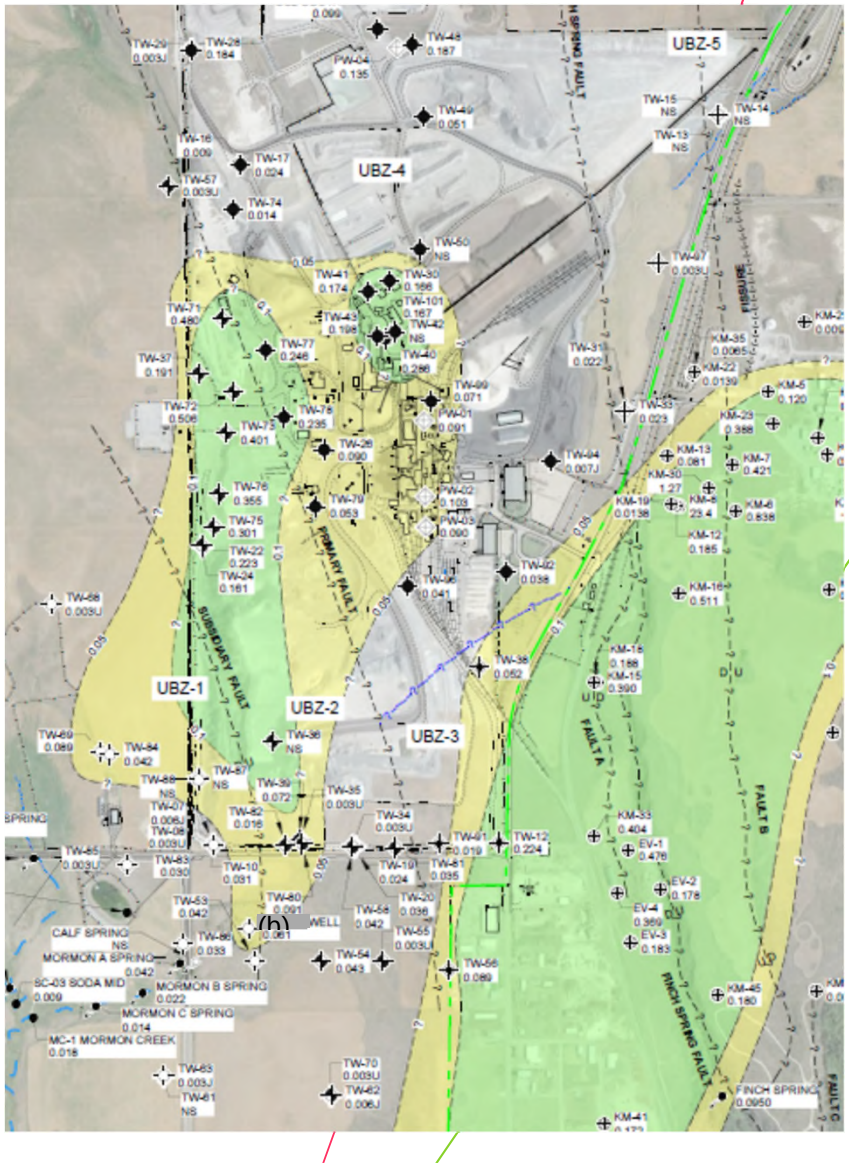
June 2019 - Selenium

- No evidence of UBZ-4 selenium plume migrating beyond Plant Production Wells to UBZ-3



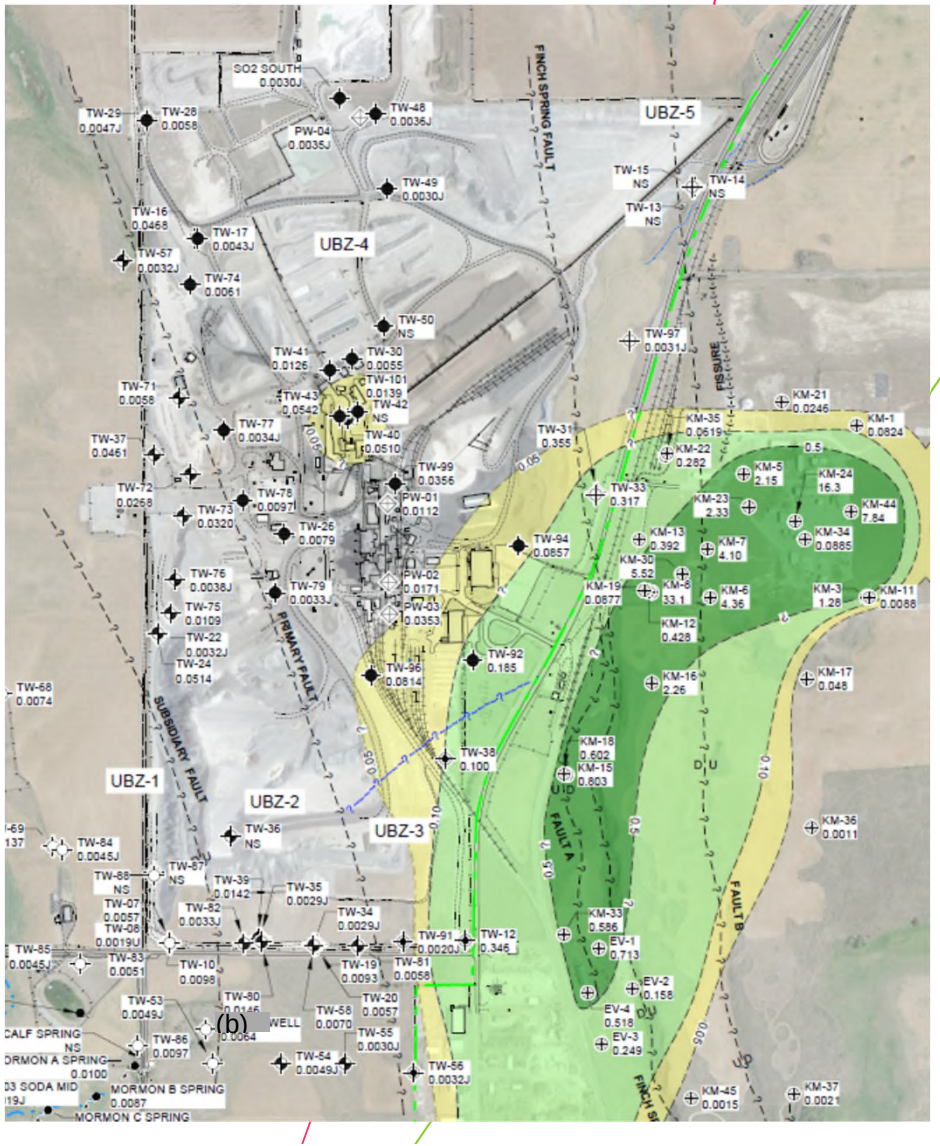
June 2019 - Molybdenum

- Kerr McGee/Tronox Molybdenum plume not continuous with Monsanto/Bayer Mo plume

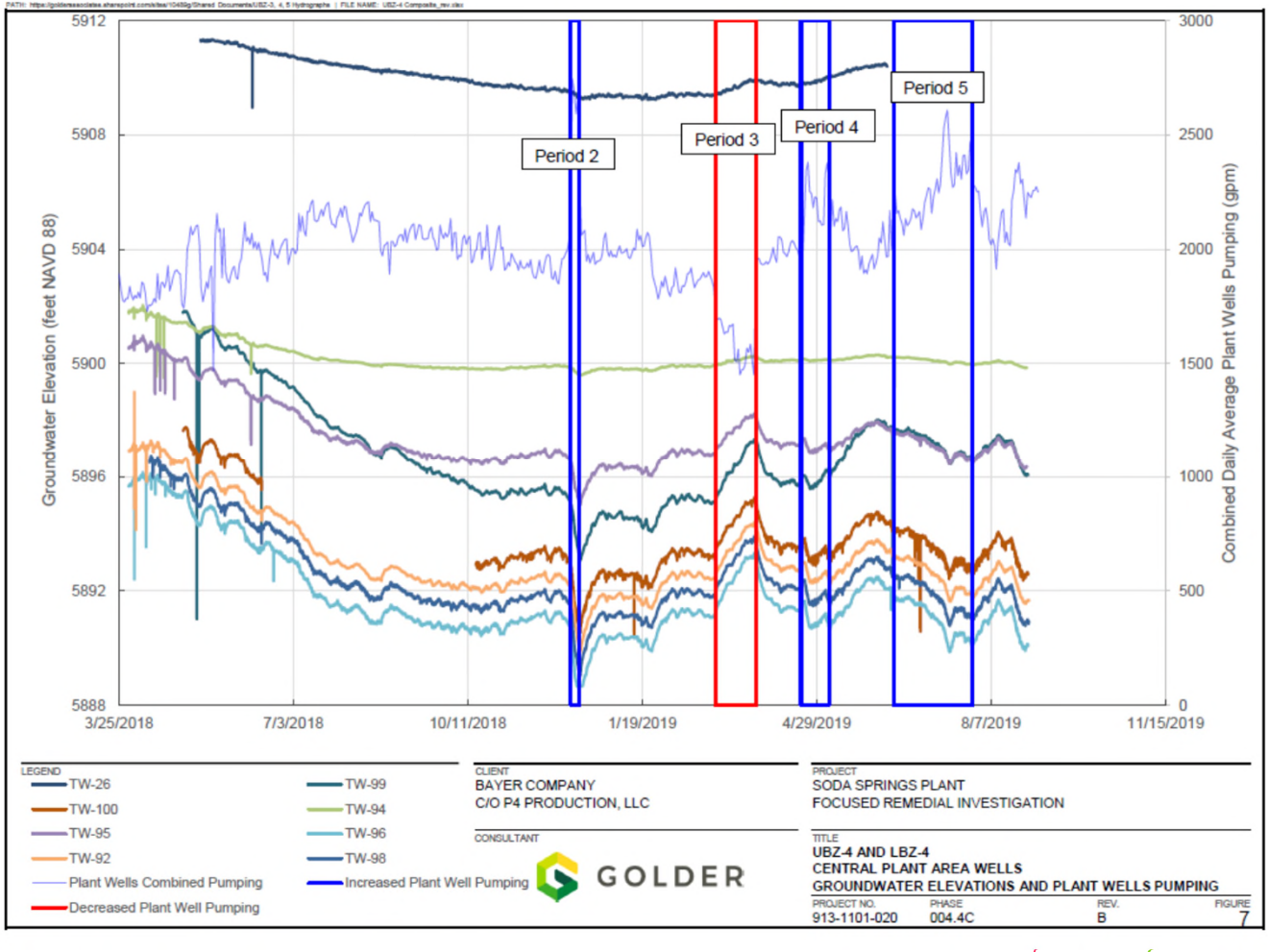


June 2019 - Vanadium

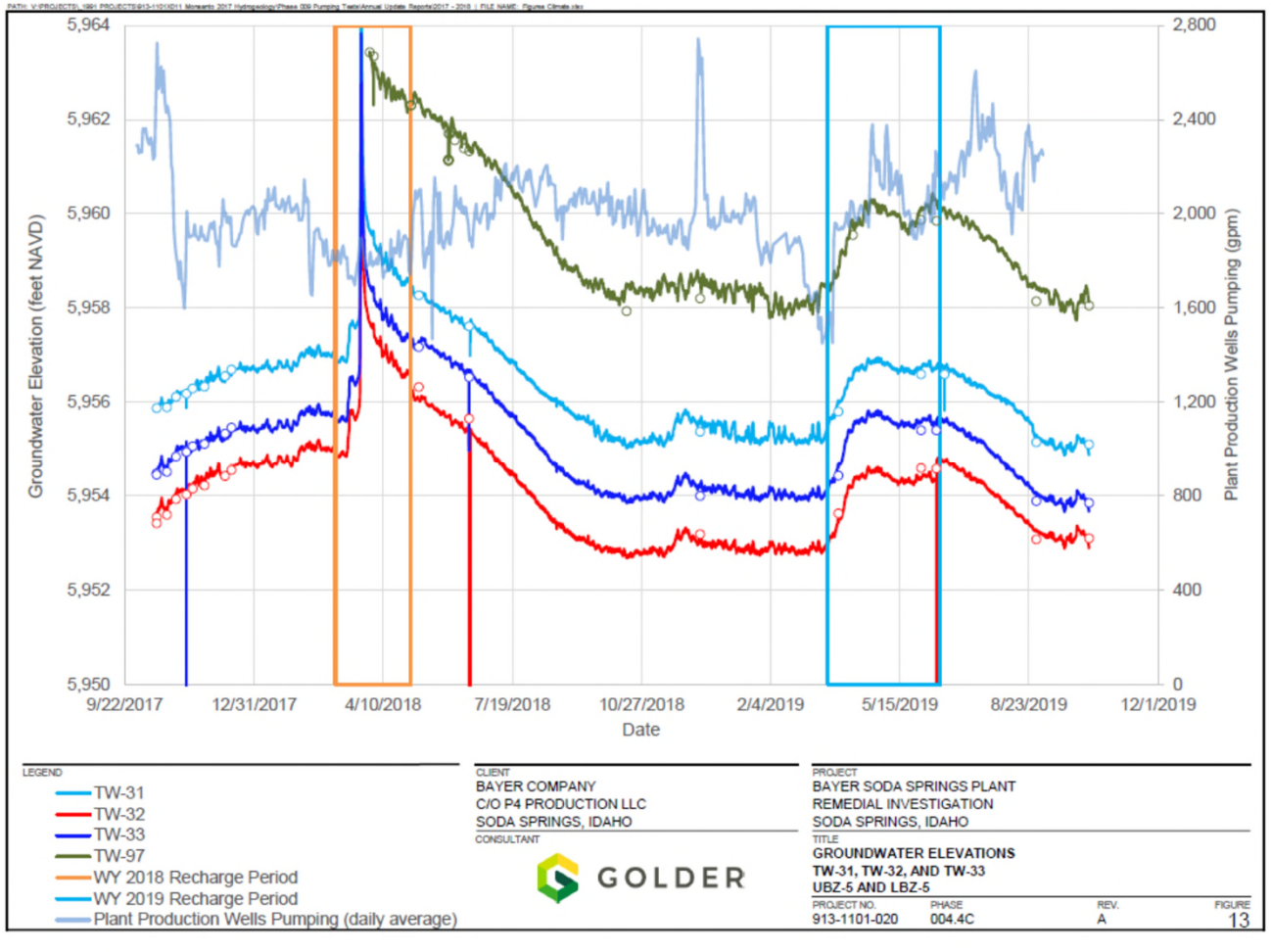
- Kerr McGee/Tronox Vanadium plume not continuous with Monsanto/Bayer Vanadium plume



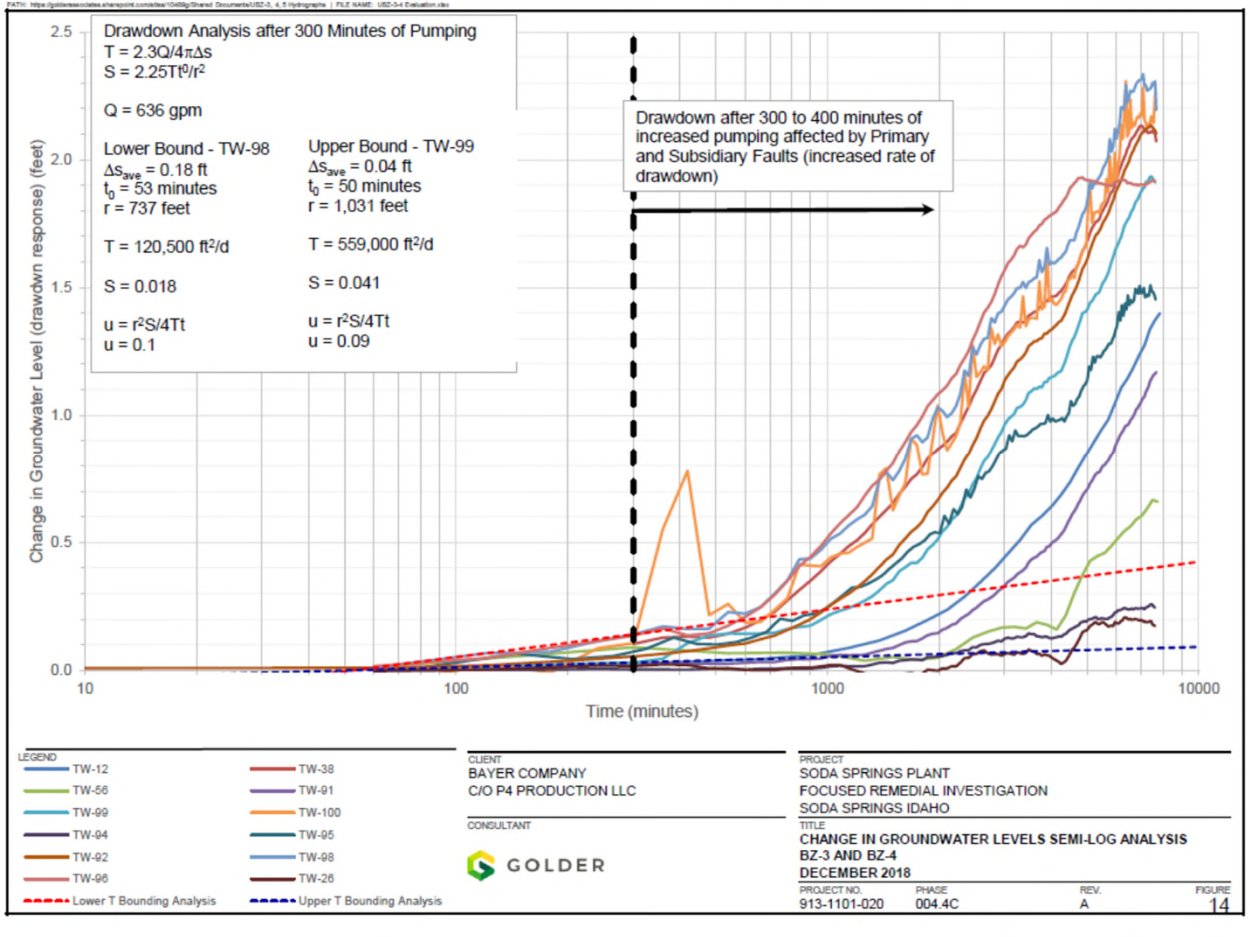
Plant Well Monitoring – Central Plant Area



Plant Well Monitoring – East of Finch Springs Fault



Plant Well Monitoring – Short Term Pumping

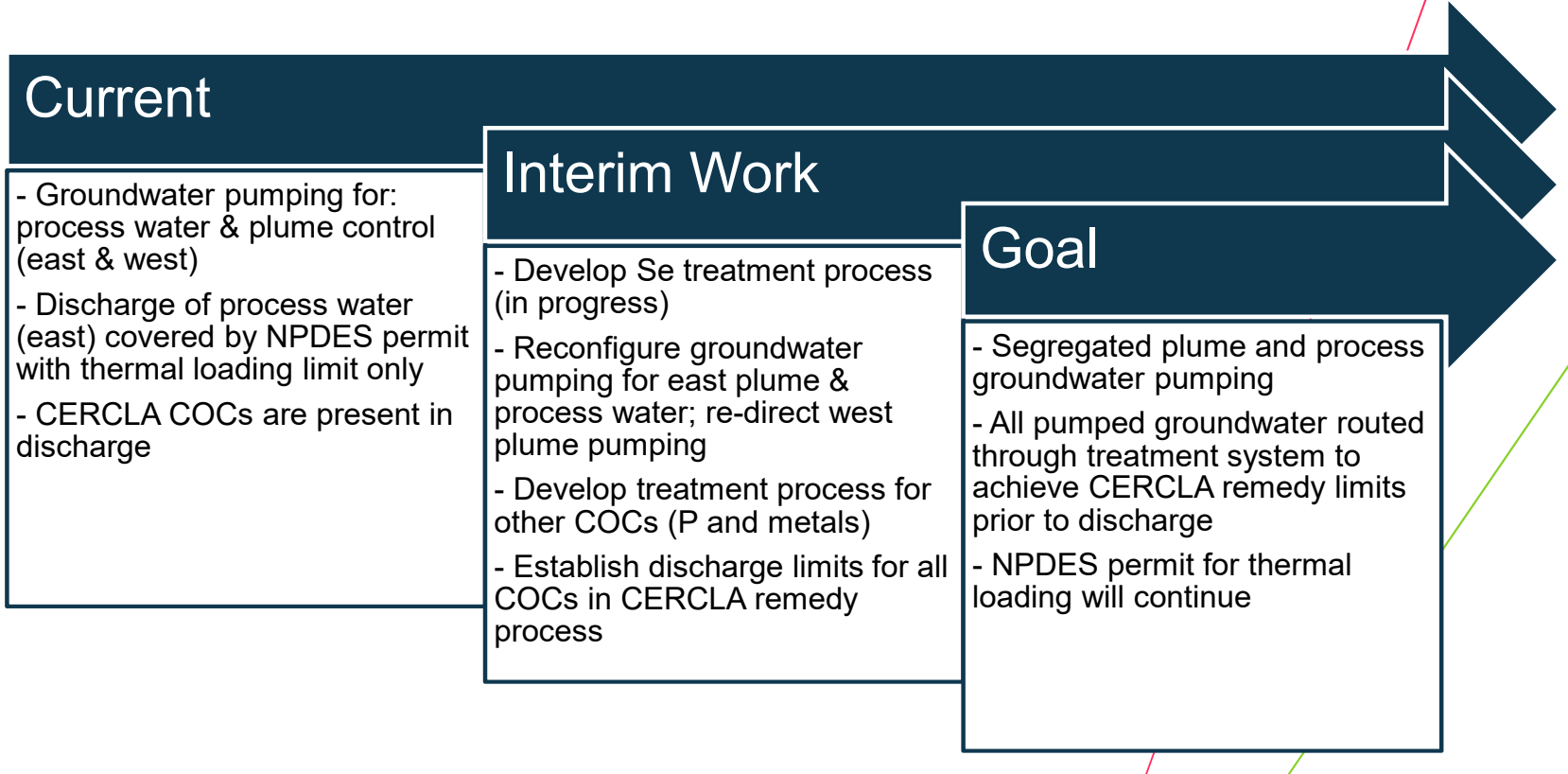


Summary

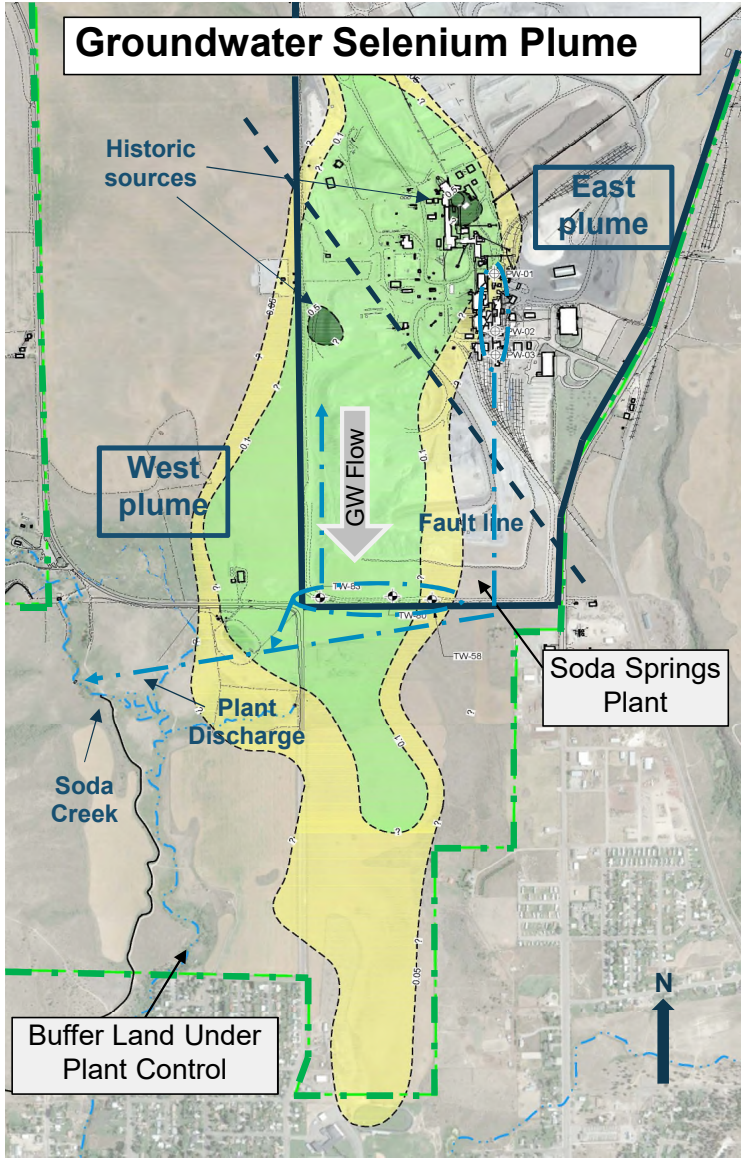
- Groundwater quality in UBZ-1 and UBZ-2
  - Pump back wells are capturing significant portion of the plume originating from old UFS ponds
  - Leading to decreasing selenium, cadmium and nitrate concentrations south of Fence Line in groundwater and springs
  - Leading to decreasing selenium plume extent
  - No apparent effects on UBZ-3 Mo plume
- Groundwater in UBZ-3 and UBZ-4
  - Finch Springs Fault forms low permeability boundary on eastern edge of Monsanto site
  - UBZ-3 and UBZ-4 – high transmissivity region bounded by faults to east and west
  - Plant Production Wells draw water from north to north-west.
  - Plant Production wells have little, if any influence on UBZ-2
  - Pump testing planned for 2020 – TW-101 near Hydroclarifier

CERCLA-CWA Integration

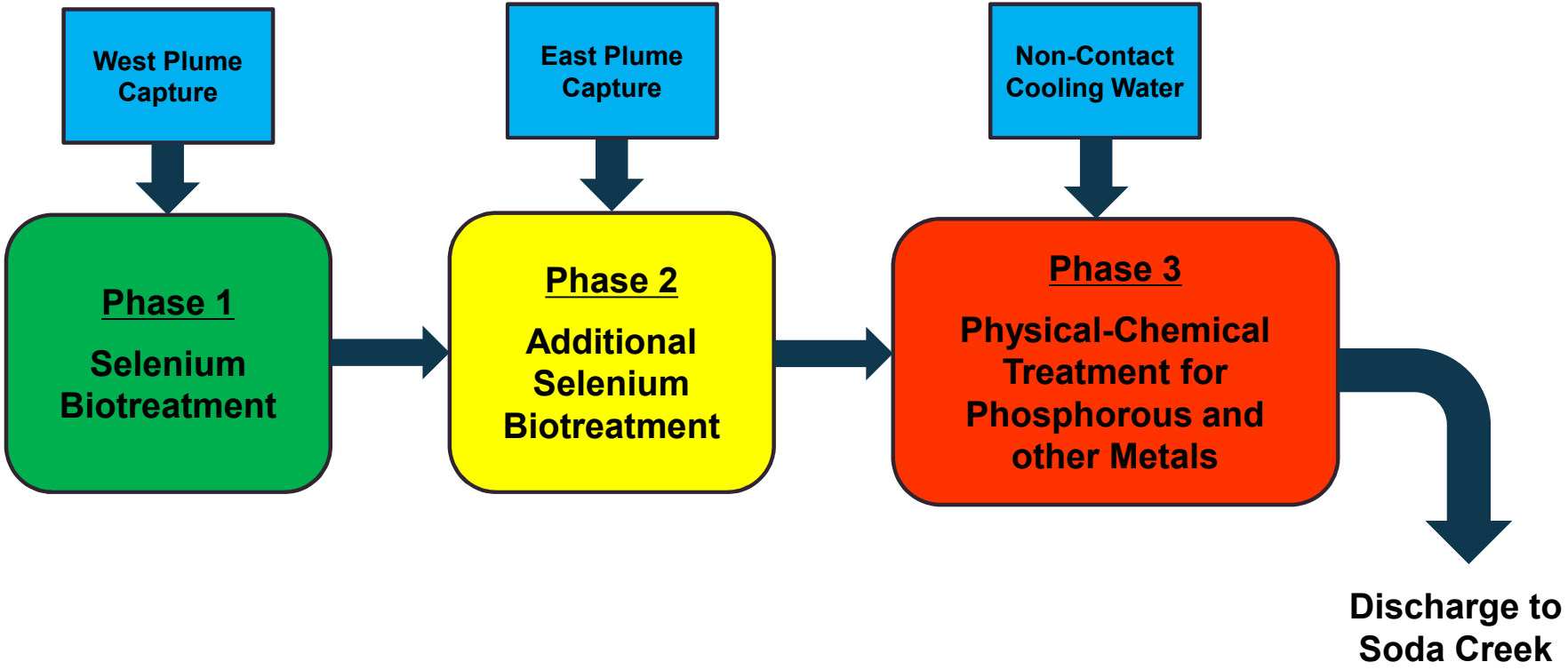
Regulation of Discharge under CERCLA Remedial Action



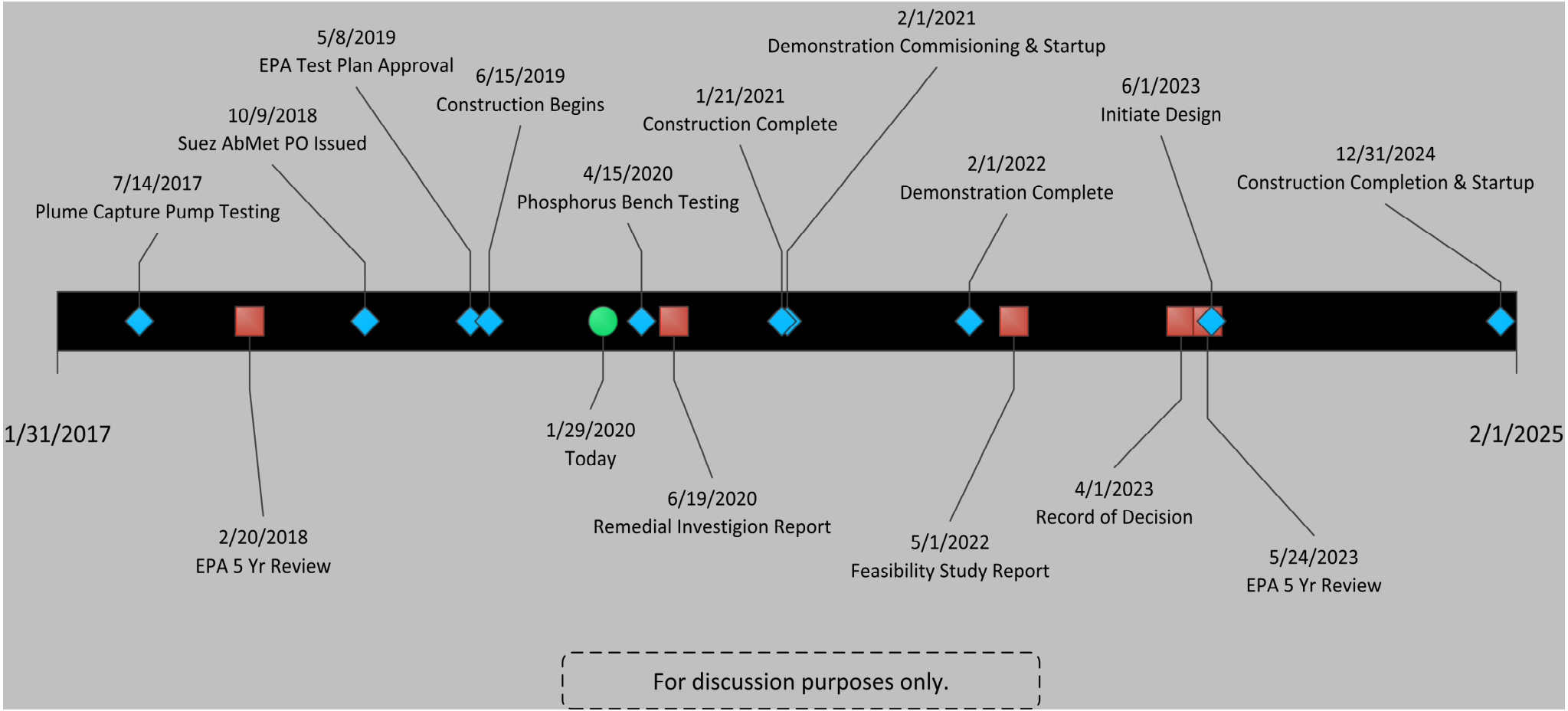
Se Plume Map


Groundwater Selenium Plume
Historic sources
East plume
West plume
GW Flow
Fault line
Soda Springs Plant
Plant Discharge
Soda Creek
Buffer Land Under Plant Control
N

Phases of Plume Capture and Water Treatment



Project Timeline



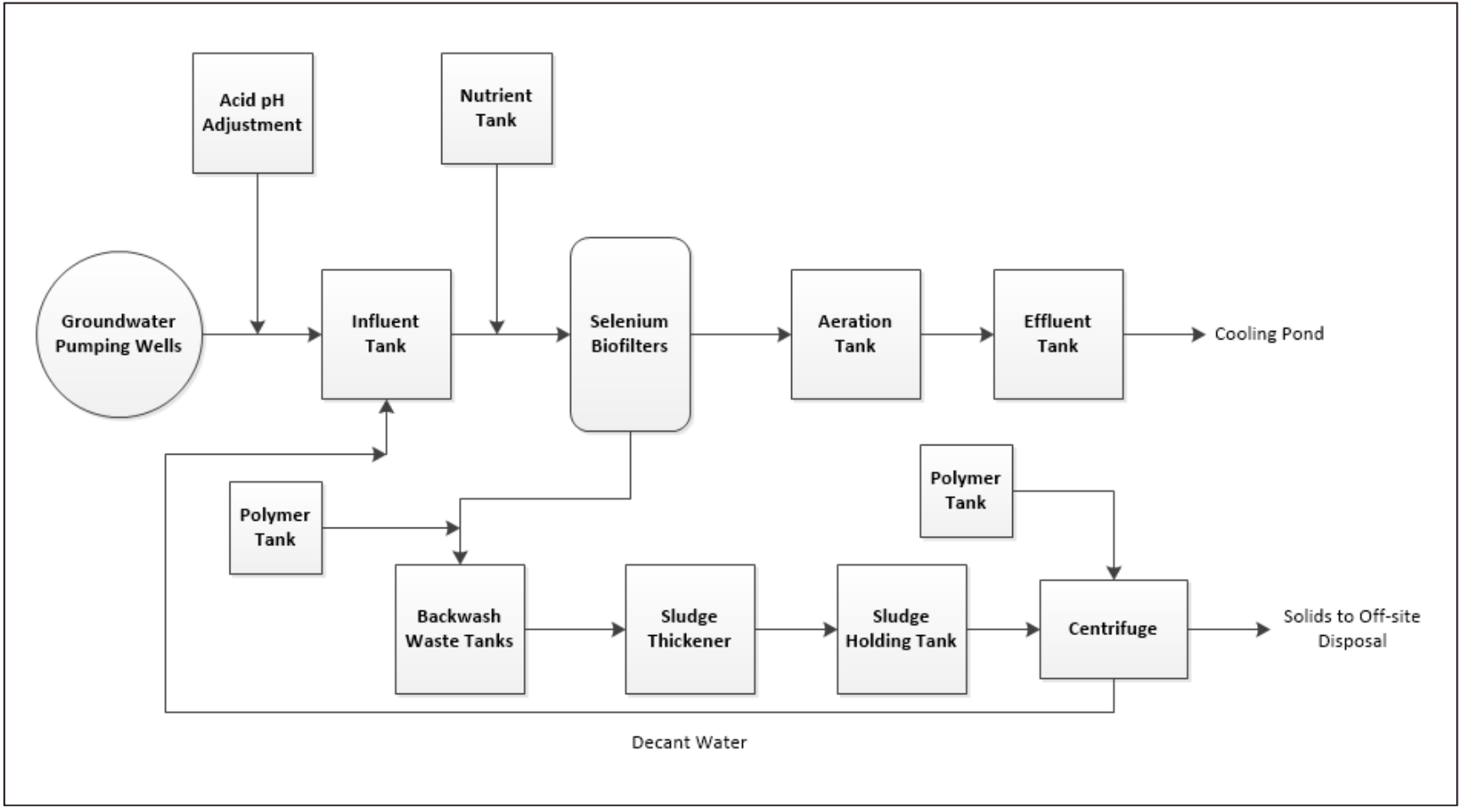
Se Treatment Demonstration Status

Demo Unit Status

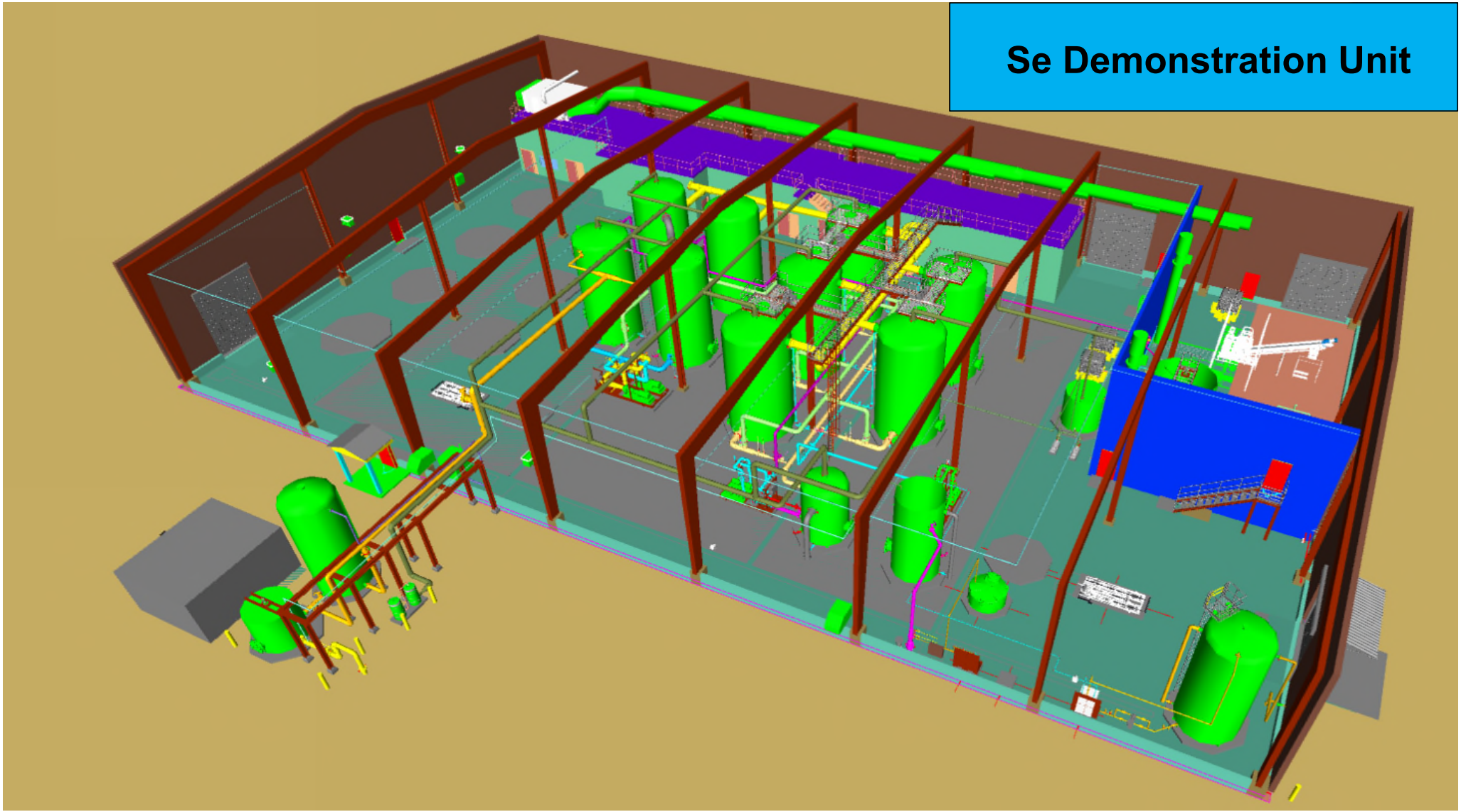
- Building Shell: nearing completion with roofing and door installation underway
- Mechanical, Electrical, & Plumbing Package: out for bid… PO Issue March 6, 2020
- Long Lead Items:
  - Suez (ordered & delivery started)
  - Centrifuge (bid review)
  - Sludge Thickener (bid review)
- Utilities:
  - Electrical (design complete & prep for bid)
  - Natural Gas (delivered)
  - Influent/Effluent Lines (in design)

January 2020

Se Demonstration Unit - Block Flow



Se Demonstration Unit



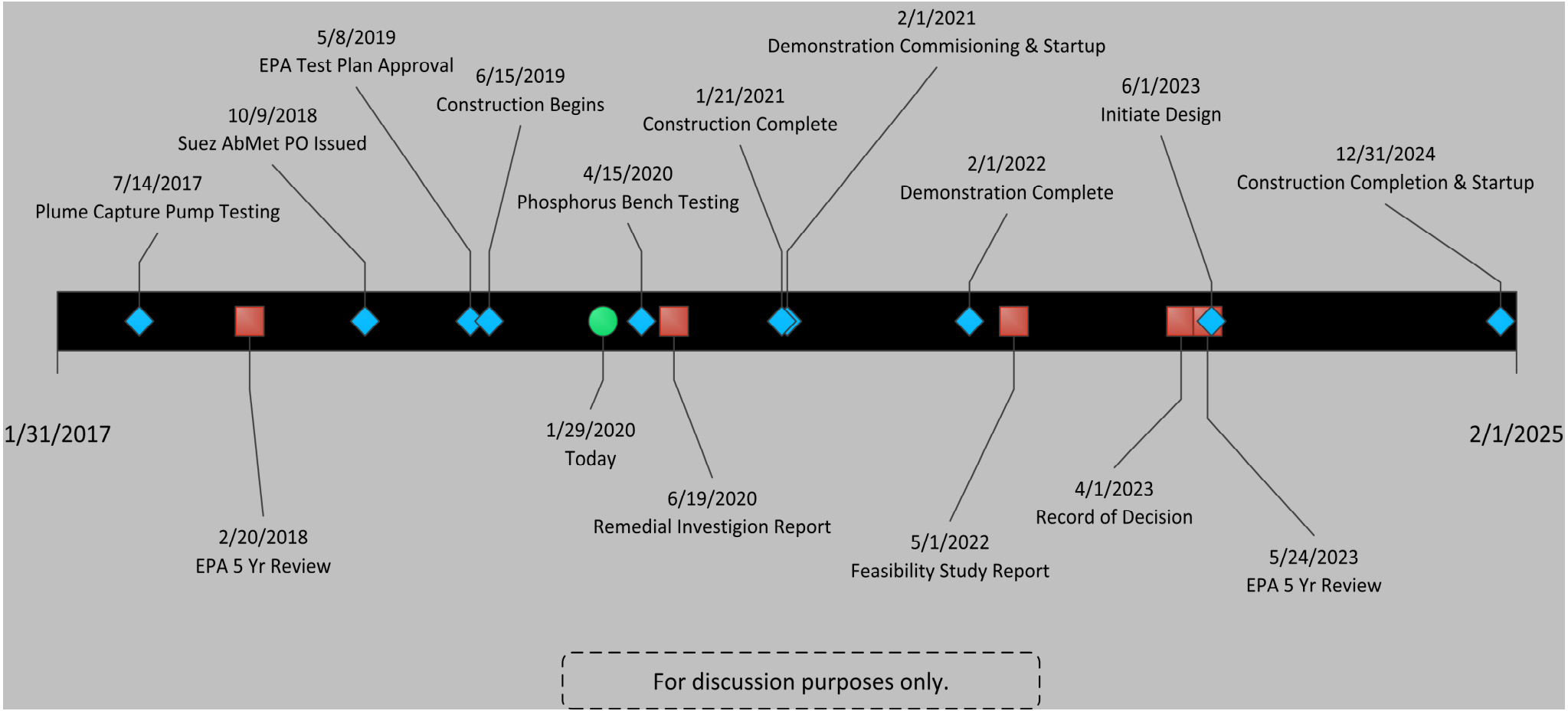
Discussion

Open Discussion/Planning

// Face-to-Face Meeting:

// Open Items/Comments/Questions:

Project Timeline



Thank you!